WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
MONTANA & NORTHERN WYOMING

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, U.S. Geological Survey, National Park Service, State Engineers of Montana and Wyoming and other Federal, State, and private organizations.

AS OF
MAR. 1, 1962

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Colorado and State of Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer and Other Agencies
Columbia	Monthly (Jan.-May)	Boise, Idaho	Idaho State Reclamation Engineer
Upper Missouri and State of Montana	Monthly (Feb.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
West-Wide	Oct. 1, Apr. 1, May 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan. 15 - Apr. 1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. Agr. Exp. Station Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Feb.-May)	Boise, Idaho	Idaho State Reclamation Engineer
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Ore. Agr. Exp. Station Oregon State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

Copies of these various reports may be secured from:

Head, Water Supply Forecasting Section
Soil Conservation Service
P.O. Box 4170, Portland 8, Oregon

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Comptroller, Water Rights Br., Dept. of Lands and Forests, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, Sacramento, Calif.

FEDERAL-STATE-PRIVATE COOPERATIVE

SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

MONTANA AND NORTHERN WYOMING
(Upper Missouri and Upper Columbia River Basins)

Report Prepared
By

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TABLE OF CONTENTS

	Page
STATE OF MONTANA WATER SUPPLY OUTLOOK	1
SNOW COURSE & RIVER BASIN MAP MONTANA & WYOMING	2
AVAILABLE SOIL MOISTURE	3
WATER SUPPLY FORECASTS	4-8
SNOW SURVEY DATA	9-15
RESERVOIR STORAGE	16-17
LIST OF COOPERATORS	Inside Back Cover

MONTANA
WATER SUPPLY OUTLOOK
as of
March 1, 1962

* *
*   *
* The water supply outlook for the coming *
* irrigation season is good to excellent.   *
*   *
* *

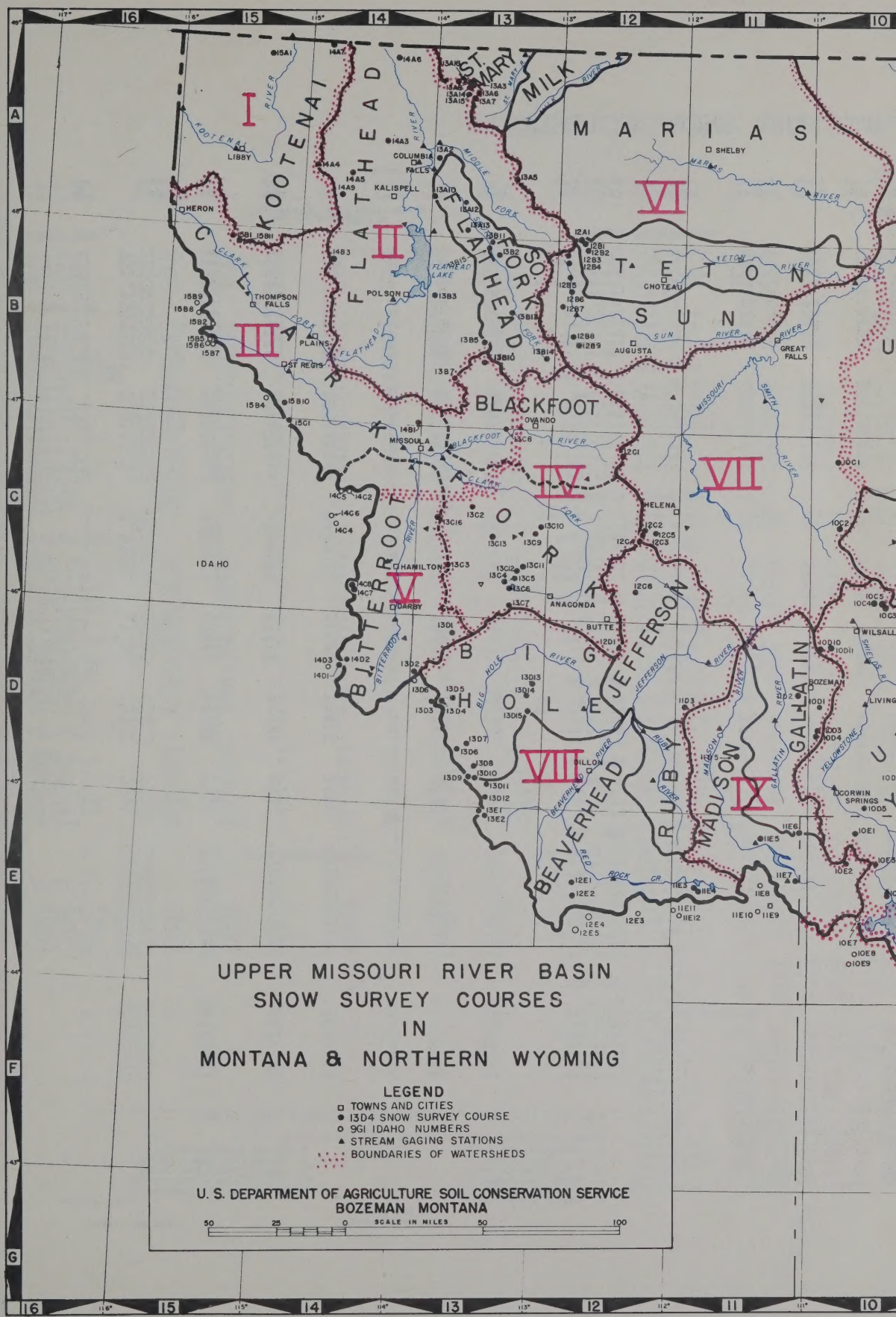
Snow survey measurements made near the first of March indicate the water stored in the mountain snowpack is very near to slightly above average and much more than last year. West of the Continental Divide, near average snowpack covers the headwaters of the Clark Fork, Bitterroot and Flathead River basins. The Kootenai River is somewhat deficient, showing only 86 percent average. East of the Continental Divide, snowpack is near normal over all drainages except the Madison, Gallatin and Yellowstone, where the pack is 15 to 25 percent above average.

Streamflow forecasts for the coming irrigation season generally are very near to slightly above the 1943-57 average. West of the Divide, streamflow is expected to be about the same as last year in the Flathead drainage; headwater streams on the Clark Fork and Bitterroot Rivers are expected to produce 30 to 50 percent more water than last season. East of the Divide, streamflow during the coming irrigation season is forecast to be 90 to 125 percent average. Headwaters of the Missouri River above Toston are expected to produce more than twice as much water as last year.

The Yellowstone River at Corwin Springs is forecast to flow about 60 percent more water than last year during the April through September period.

Storage in irrigation reservoirs generally is below average; however, prospects for these reservoirs to fill during spring runoff are good.

Mountain soil moisture generally is good. Areas deficient in soil moisture are improving and should require very little priming from the snowpack.


I
II
III
IV
V
VI
VII
VIII
IX
KOOTENAI
FLATHEAD
CLARK FORK
BLACKFOOT
BITTERROOT
BIG HOLE
BEAVERHEAD
RUBY
MADISON
GALLATIN
JEFFERSON
MARIAS
TETON
SUN
MILK
ST. MARY
IDAHO
LIBBY
HERON
THOMPSON FALLS
PLAINS
ST REGIS
POLSON
KALISPELL
COLUMBIA FALLS
FLATHEAD LAKE
MISSOULA
OVANDO
HAMILTON
DARBY
ANACONDA
BUTTE
HELENA
CHOTEAU
AUGUSTA
GREAT FALLS
SHELBY
DILLON
BOZEMAN
WILSALL
LIVINGSTON
CORWIN SPRINGS
UPPER MISSOURI RIVER BASIN
SNOW SURVEY COURSES
IN
MONTANA & NORTHERN WYOMING
LEGEND
TOWNS AND CITIES
13D4 SNOW SURVEY COURSE
9GI IDAHO NUMBERS
STREAM GAGING STATIONS
BOUNDARIES OF WATERSHEDS
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA
SCALE IN MILES
50 25 0 50 100

UPPER MISSOURI RIVER BASIN
SNOW SURVEY COURSES
IN
MONTANA & NORTHERN WYOMING

LEGEND

- □ TOWNS AND CITIES
- ● 13D4 SNOW SURVEY COURSE
- ○ 9G1 IDAHO NUMBERS
- ▲ STREAM GAGING STATIONS
- BOUNDARIES OF WATERSHEDS

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA

SCALE IN MILES 50 25 0 50 100

S,R-11,484 (1961)

S,R-11,484 (1961)

AVAILABLE SOIL MOISTURE
as of
MARCH 1, 1962

Drainage Basin and Station	Station No.	Elev.	Soil Profile in Inches		Date	Soil Moisture Content in Inches About 3/1/62			
			Depth	Cap.		1962	1961	1960	Avg.
GALLATIN									
College Site	11D2M	4856	54	14.5	3/2	11.6	9.9	10.7	8.5
MADISON									
Red Bluff	11D4M	4900	40	4.7	2/28	2.8	1.7	-	-
SHIELDS									
Battle Ridge	10D11M	6020	48	15.4	2/21	14.3	11.2	-	-
Shields River	10C4M	5850	48	20.8	2/23	12.9	12.6	-	-
FLATHEAD									
Desert Mountain	13A2M	5600	54	8.4	2/26	6.3	6.4	8.1	7.2
Marias Pass	13A5M	5250	54	6.5	3/6	5.6	5.0	5.6	5.2
Spotted Bear R.S.	13B15M	3700	28	6.2	3/1	5.8	6.2	5.6	5.9
Trout Lake	13A12M	3600	54	12.7	2/27	12.7	12.4	11.7	12.3

AVAILABLE SOIL MOISTURE
as of
October 1, 1961

						1961	1960	1959	Avg.
GALLATIN									
College Site	11D2M	4856	54	14.5	9/29	9.1	5.8	8.6	5.8
MADISON									
Red Bluff	11D4M	4900	40	4.7	9/22	3.2	-	-	-
SHIELDS									
Battle Ridge	10D11M	6020	48	15.4	9/30	9.3	10.6	-	-
Shields River	10C4M	5850	48	20.8	9/30	8.7	11.5	-	-
FLATHEAD									
Desert Mountain	13A2M	5600	54	8.4	10/5	4.9	4.5	7.2	5.8
Marias Pass	13A5M	5250	54	6.5	9/26	3.6	2.8	4.9	3.8
Spotted Bear R.S.	13B15M	3700	28	6.2	10/5	4.4	0.9	5.2	3.1
Trout Lake	13A12M	3600	54	12.7	10/5	7.8	6.9	9.8	7.7

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin & Course Name	Number	Elev.	Location Sec.	Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Meas. By
COLUMBIA RIVER BASIN									
KOOTENAI RIVER									
Baree Creek	15B11	5500	6	25N	30W	1937	4,5,5½		2
Brush Creek	14A4	5000	13	30N	26W	1937	3,4,5		1
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5,5½		1
Weasel Divide	14A7	5450	8	37N	24W	1937	3,4,5,5½		1
FLATHEAD RIVER									
Basin Creek	13B14A	5000	11	19N	12W	1951	2,3,4,5		1
Bassoo Peak	14B3	5150	11	24N	25W	1960	3,4,5		1,5
Big Creek	13B3	6750	7	22N	18W	1941	3,4,5,	6	1,5
Desert Mountain	13A2M	5600	24	31N	19W	1937	1,2,3,4,5		1,2
Griffin Creek Divide	14A9	5150	11	28N	25W	1960	3,4,5		1,5
Hell Roaring Divide	14A3	5770	35	32N	22W	1942	3,4,5		1
Holbrook	13B13A	4530	18	21N	13W	1951	2,3,4,5		1
Kishenehn	14A6	3886	14	37N	22W	1954	3,4		6
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5		1
Marias Pass	13A5M	5250	34	30N	14W	1934	1,2,3,4,5		3
Mineral Creek	13A16	4000	29	35N	17W	1939	3,4		6
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4,5,	6	1,5
Quintonkon	13A13	3800	11	26N	17W	1951	4		1,2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	1,2,3,4,5		1,2
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5		2
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5		2
Trout Lake	13A12M	3600	21	28N	17W	1948	1,2,3,4,5		1,2
Twin Creeks	13B11	3580	14	26N	16W	1951	3,4,5		1,2
Upper Holland Lake	13B5	7000	28	20N	16W	1948	3,4,5		2
CLARK FORK RIVER									
Black Pine	13C13	7100	23	8N	15W	1959	3,4		1
Coyote Hill	13B10	4200	12	18N	16W	1947	1,2,3,4,5		1,2
El Dorado Mine	13C9	7800	23	8N	12W	1949	3,4		1
Fred Burr Pass	13C11	8000	12	6N	13W	1957	3,4		1
Freezeout Pass	15B10	6800	21	15N	27W	1937	4,5		1,2
Gold Creek Lake	13C10	7200	14	8N	12W	1949	3,4		1
Hoodoo Creek	15C1	6200	9	14N	27W	1937	4,5		1,2
Intergaard	13C4	6450	6	5N	13W	1936	2,3,4		4
Lubrecht Forest #6	13C8	4040	11	13N	14W	1951	1,2,3,4,5		8
Red Lion	13C12	7000	27	6N	13W	1958	3,4		1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	3,4		1
Slide Rock Mt.	13C2	7100	35	10N	16W	1937	3,4		1
Southern Cross	13C5	6500	8	5N	13W	1936	2,3,4		4
Storm Lake	13C7	7780	19	4N	13W	1939	1,2,3,4,5		1
Stuart Mill	13C6	6500	19	5N	13W	1936	2,3,4		4
T.V. Mountain	14B1	6800	33	15N	19W	1956	1,2,3,4,5		1
BITTERROOT RIVER									
Ambrose	13C16	6475	28	9N	18W	1960	3,4,5		1
East Fork R.S.	13D1	5400	16	2N	17W	1937	3,4		1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5		1,3
Lolo Pass	14C5	5230	11	10N	24W	1937	3,4,5		1,2
Lost Horse	14C7	5940	5	4N	23W	1960	3,4,5		1
Nez Perce Camp	14D2	5580	19	1S	23W	1937	3,4,5		1
Nez Perce Pass	14D1	6575	25	1S	24W	1937	3,4,5		1
Twin Lakes	14C8	6510	32	5N	23W	1960	3,4,5		1
SASKATCHEWAN RIVER BASIN									
ST. MARY									
Iceberg Lake #3	13A3	5600	34	36N	16W	1922	5		3,9
Josephine Lower #9	13A14	4900	10	35N	16W	1955	5		3,9
Mount Allen #7	13A7	5700	22	35N	16W	1922	5		3,9
Piegan Pass #6	13A6	5500	15	35N	16W	1922	5		3,9
Ptarmigan #8	13A8	5800	32	36N	16W	1937	5		3,9

Drainage Basin & Course Name	Number	Elev.	Location Sec.	Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Meas. By
MISSOURI RIVER BASIN									
BEAVERHEAD RIVER									
Bloody Dick	13D10	7600	12		8S	16W	1948	3,4	1
Gold Stone	13D9	8100	11		8S	16W	1948	3,4	1
Lakeview Canyon	11E4	6930	26		14S	2W	1948	3,4,5	10
Lakeview Ridge	11E3	7400	27		14S	2W	1948	3,4,5	10
Lemhi Pass	13E1	7480	9		10S	15W	1948	3,4	1
Limekiln	12E2	6950	5		15S	9W	1948	3,4	1
Selway Junction	13D11	6800	27		8S	15W	1948	3,4	1
Terrell Creek	13D12	6650	14		9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15		10S	15W	1948	3,4	1
White Pine Ridge	12E1	8850	18		14S	9W	1948	3,4	1
BIG HOLE RIVER									
Anderson Meadow	13D14	7000	18		3S	12W	1948	3,4	1
Below Big Hole Pass	13D4	6900	24		3S	18W	1948	3,4	1
Big Hole Pass	13D3	7240	28		3S	18W	1948	3,4	1
East Boundary	13D5	6700	22		3S	17W	1948	3,4	1
Elk Horn Springs	13D15	8450	15		4S	12W	1935	3,4,5	3
Jahnke Creek	13D8	7340	25		7S	16W	1948	3,4	1
Miner Forks	13D6	7300	24		6S	17W	1948	3,4	1
Miner Lake	13D7	6720	10		6S	16W	1945	3,4	1
Wise River	13D13	6300	15		2S	12W	1948	3,4	1
JEFFERSON RIVER									
Picnic Grounds	12D6	6500	10		5N	6W	1941	2,3,4	4
Pipestone Pass	12D1	7200	10		1N	7W	1938	1,2,3,4,5	1
MADISON RIVER									
Hebgen Dam	11E5	6550	22		11S	3E	1934	1,2,3,4,5	3
Jack Creek	11D5	7600	13		6S	1E	1961	3,4	1
Norris Basin	10E2	7500	44°44'			110°42'	1936	1,2,3,4,5	6
North Meadow	11D3	7500	23		3S	3W	1961	3,4	1
West Yellowstone	11E7	6700	34		13S	5W	1934	1,2,3,4,5	3
GALLATIN RIVER									
Devil's Slide	10D4	8100	14		5S	6E	1935	2,3,4,5	1
Hood Meadow	10D3	6600	22		4S	6E	1935	2,3,4,5	1
New World	10D1	6700	24		3S	6E	1939	2,3,4	1
Twenty-One Mile	11E6	7150	1		11S	5E	1934	1,2,3,4,5	3
MISSOURI RIVER MAIN STEM									
Chessman Reservoir	12C5	6200	2		8N	5W	1936	1,2,3,4,5	3
Crystal Lake	9C1	6100	19		12N	18E	1941	3,4	1
Grasshopper	10C2	7000	19		9N	8E	1938	3,4	1
Kings Hill	10C1	7950	35		13N	7E	1934	3,4,5	3
Rocky Boy	9A1	5200	15		28N	16E	1941	3,4	7
Stemple Pass	12C1	6900	16		13N	7W	1934	3,4,5	3
Ten Mile Creek L.	12C2	6250	13		8N	6W	1935	1,2,3,4,5	3
Ten Mile Creek M.	13C3	6800	13		8N	6W	1934	1,2,3,4,5	3
Ten Mile Creek, U.	12C4	8000	19		8N	5W	1935	1,2,3,4,5	3
SUN-TETON-MARIAS RIVERS									
Benchmark	12B8	5500	9		20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33		23N	10W	1949	3,4	1
Five-Mile	12B9	5600	36		20N	10W	1948	3,4	1
Freight Creek	12A1	6000	13		26N	10W	1948	3,4	1
Gates Park	12B5	5300	31		24N	10W	1949	3,4	1
Goat Mountain	12B7	7000	20		22N	10W	1934	3,4	1
Waldron Creek	12B2	5600	16		25N	9W	1948	3,4	1
West Fork	12B1	6000	6		25N	9W	1948	3,4	1
Wrong Creek	12B4	5700	32		25N	10W	1949	3,4	1
Wrong Ridge	12B3	6800	17		25N	10W	1949	3,4	1
MILK RIVER (Canada)									
Cress Day	10AA2	3450		49°-19'		110°-14'-15"	1953	4	9
Cypress Park	9AA1	4000		49°-39'		109°-31'-00"	1953	4	9
Elkwater	10AA1	4100		49°-40'		110°-15'-16"	1953	4	9
Val Marie	7AA1	2700		40°-19'		107°-43'-44"	1953	4	9
UPPER YELLOWSTONE RIVER									
Bald Ridge	10C5	7500	11		4N	10E	1961	3,4,5	1
Camp Senia	9D1	7890	2		8S	18E	1937	3,4,5	1
Canyon	10E3	7750	44°-44'			110°-30'	1938	1,2,3,4,5	6
Cooke City	10D7	7400	25		9S	14E	1937	1,2,3,4,5	6
Crevice Mt.	10D5	8400	22		9S	9E	1935	3,4	2
Gertrude Lake	9D3	9250	10		8S	18E	1961	3,4,5	1
Grizzly Peak	9D5	8400	26		7S	19E	1961	3,4,5	1
Independence	10D6	8000	22		7S	12E	1940	3,4,5	1
Lake Camp	10E4	7850	44°-34'			110°-24'	1936	1,2,3,4,5	6
Lodgepole	9E1	8200	32		56N	106W	1940	2,3,4,5	1,2
Lupine	10E1	7300	44°-54'			110°-37'	1938	1,2,3,4,5	6
Monument Peak	10D12	9000	22		7S	12E	1961	3,4,5	1
Porcupine R.S.	10C3	6500	10		4N	10E	1938	3,4,5	1
Timberline Creek	9D4	8850	10		8S	18E	1961	3,4,5	1
Sacajawea	10D10	6550	36		2N	6E	1960	3,4,5	1
West Rosebud	9D2	7500	10		7S	16E	1960	1,2,3,4,5	4

Drainage Basin & Course Name	Number	Elev.	Location Sec.	Lat.	Twp.	Range Long.	Record Began	Measuring Dates	Meas. By
MISSOURI RIVER BASIN (Continued) (WYOMING)									
WIND RIVER									
Big Warm	9F12	8800	36		42N	109W	1955	2,3,4,5	1
Burroughs Creek	9F4	8800	15		43N	107W	1948	2,3,4,5	1
Dinwoodie	9F10	10000	9		38N	105W	1948	2,3,4,5	1,5
Dinwoodie Glaciers	9F17	10500	3		38N	106W	1959	2,3,4	1
Dry Creek	9F9	9500	34		4N	109W	1948	2,3,4,5	1,5
DuNoir	9F6	8750	27		42N	108W	1940	2,3,4,5	1
Geyser Creek	9F7	8500	12		41N	108W	1948	2,3,4,5	1
Little Warm	9F8	9500	24		41N	108W	1948	2,3,4,5	1
Sheridan R.S. #2	9F14	7500	3		42N	109W	1955	2,3,4,5	1
T-Cross Ranch	9F3	8000	1		43N	107W	1940	2,3,4,5	1
Togwotee Pass	10F9	9600	29		44N	110W	1936	2,3,4,5	11
POPO AGIE RIVER									
Blue Ridge	8G2	9500	23		31N	101W	1939	2,3,4,5	1
Bruce's Camp	8G5	6500	24		32N	101W	1955	2,3,4	1
Hobb's Park	9G3	10000	22		2S	3W	1948	2,3,4,5	1,5
Mosquito Park	9G4	9500	23		2S	3W	1940	2,3,4,5	1,5
Sawmill Glade	8G1	8500	3		31N	101W	1939	2,3,4,5	1
South Pass	8G3	9000	13		30N	101W	1939	2,3,4,5	1
St. Lawrence R.S.	9F11	9000	26		1N	4W	1940	2,3,4,5	1,5
Trout Creek	9G2	8400	5		2S	2W	1948	2,3,4,5	1,5
Twenty Lakes	9G7	10500	2		1S	5W	1959	2,3,4	1
BIG HORN RIVER									
Five-Springs Falls	7E31	7500	19		56N	92W	1956	2,3,4,5	1
Kirwin	9F19	11000	13		45N	104W	1960	2,3,4	1
Medicine Wheel	7E30	9000	24		56N	92W	1956	2,3,4,5	1
Owl Creek	8F1	8700	36		43N	101W	1948	2,3,4,5	1
Wood River #2	9F15	8000	28		46N	103W	1956	2,3,4,5	1
Timber Creek #2	9E3	8800	25		47N	103W	1955	2,3,4,5	1
Frontier Needle	9F20	10000	20		46N	106W	1961	2,3,4	1
SHOSHONE RIVER									
Carter Mt.	9E4	7800	15		50N	103W	1957	1,2,3,4	1
East Entrance	10E6	7000	17		52N	109W	1948	1,2,3,4,5	6
Ishawooa Cone	9E5	9200	12		49N	108W	1960	2,3,4	1
Sylvan Pass	10E5	7100	12		52N	110W	1936	1,2,3,4,5	6
Younts Peak	9F18	8500	28		46N	108W	1960	2,3,4	1
NOWOOD CREEK									
Cold Springs Camp	7E25	8700	1		50N	86W	1956	2,3,4,5	1
Medicine Lodge Lakes	7E24	9500	7		51N	87W	1956	2,3,4,5	1
Onion Gulch	7E27	8100	31		48N	85W	1956	2,3,4,5	1
Tensleep Lake	7E26	9075	33		50N	86W	1956	2,3,4,5	1
Tyrell R.S.	7E35	8300	30		49N	86W	1956	2,3,4,5	1
SHELL CREEK									
Bald Mountain	7E21	9600	33		56N	91W	1956	2,3,4,5	1
Granite Pass	7E17	8950	19		54N	88W	1956	2,3,4,5	1
Ranger Creek	7E4	8800	32		53N	88W	1935	2,3,4,5	1
Shell Creek	7E23	9600	12		52N	88W	1956	2,3,4,5	1
TONGUE RIVER									
Beaver Tongue Div.	7E20	9200	12		55N	91W	1956	2,3,4,5	1
Big Goose #2	7E32	7700	4		53N	86W	1955	2,3,4,5	1
Bone Springs Div.	7E18	9200	32		55N	89W	1956	2,3,4,5	1
Burgess R.S. #2	7E33	7900	36		56N	89W	1955	2,3,4,5	1
Dome Lake #2	7E34	8800	11		53N	87W	1950	2,3,4,5	1
Gloom Creek	7E14	9300	32		55N	87W	1956	2,3,4,5	1
Sibley Lake	7E11	8000	10		55N	88W	1956	2,3,4,5	1
Sucker Creek	7E12	9000	19		55N	87W	1956	2,3,4,5	1
Steamboat Point	7E10	7500	32		56N	87W	1956	2,3,4,5	1
Wood Rock G.S.	7E13	8500	3		54N	88W	1956	2,3,4,5	1
Geneva Pass	7E37	10600	30		52N	86W	1961	2,3,4,5	1
POWDER RIVER									
Bear Trap	7F1	8000	10		45N	85W	1960	2,3,4,5	1
Canyon Creek	7F2	7400	16		43N	86W	1960	2,3,4,5	1
Clouds Peak	7E36	10000	15		51N	85W	1960	2,3,4	1
Muddy Creek G.S.	6E2	7800	2		48N	84W	1956	2,3,4,5	1
Munkres Pass	7E8	9700	11		48N	85W	1950	2,3,4,5	1
Soldier Park	7E5	8700	36		51N	85W	1950	2,3,4,5	1
Sour Dough	7E6	8500	17		49N	84W	1936	2,3,4,5	1
Tensleep R.S.	7E7	8300	30		49N	86W	1956	2,3,4,5	1

a. Numerals 1,2,3,4 and 5 refer to January 1, February 1, March 1, April 1 and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. Montana State Forestry School
9. Dominion Water & Power Bureau
10. U. S. Fish and Wildlife Service
11. U. S. Bureau of Reclamation

M - Soil Moisture
A - Aerial Marker

5,R-11,484 - (1961)

USDA SCS LINCOLN NEBR 1961

AVAILABLE SOIL MOISTURE
as of
MARCH 1, 1962

Drainage Basin and Station	Station No.	Elev.	Soil Profile in Inches Depth	Soil Profile in Inches Cap.	Date	Soil Moisture Content in Inches About 3/1/62 1962	1961	1960	Avg.
GALLATIN									
College Site	11D2M	4856	54	14.5	3/2	11.6	9.9	10.7	8.5
MADISON									
Red Bluff	11D4M	4900	40	4.7	2/28	2.8	1.7	-	-
SHIELDS									
Battle Ridge	10D11M	6020	48	15.4	2/21	14.3	11.2	-	-
Shields River	10C4M	5850	48	20.8	2/23	12.9	12.6	-	-
FLATHEAD									
Desert Mountain	13A2M	5600	54	8.4	2/26	6.3	6.4	8.1	7.2
Marias Pass	13A5M	5250	54	6.5	3/6	5.6	5.0	5.6	5.2
Spotted Bear R.S.	13B15M	3700	28	6.2	3/1	5.8	6.2	5.6	5.9
Trout Lake	13A12M	3600	54	12.7	2/27	12.7	12.4	11.7	12.3

AVAILABLE SOIL MOISTURE
as of
October 1, 1961

						1961	1960	1959	Avg.
GALLATIN									
College Site	11D2M	4856	54	14.5	9/29	9.1	5.8	8.6	5.8
MADISON									
Red Bluff	11D4M	4900	40	4.7	9/22	3.2	-	-	-
SHIELDS									
Battle Ridge	10D11M	6020	48	15.4	9/30	9.3	10.6	-	-
Shields River	10C4M	5850	48	20.8	9/30	8.7	11.5	-	-
FLATHEAD									
Desert Mountain	13A2M	5600	54	8.4	10/5	4.9	4.5	7.2	5.8
Marias Pass	13A5M	5250	54	6.5	9/26	3.6	2.8	4.9	3.8
Spotted Bear R.S.	13B15M	3700	28	6.2	10/5	4.4	0.9	5.2	3.1
Trout Lake	13A12M	3600	54	12.7	10/5	7.8	6.9	9.8	7.7

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1962

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	COLUMBIA RIVER BASIN					
	KOOTENAI RIVER					
3030	Libby (at)	Apr-Sept	7028	91	8764	7723
		Apr-July	6092	91	7759	6694
3050	Leonia (at)	Apr-Sept	8100	91	10002	8907
		Apr-July	7110	91	8997	7817
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	Apr-Sept	1841	95		1942
		Apr-July	1695	96		1769
		Apr-June	1424	96		1491
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	Apr-Sept	1800	96	1852	1882
		Apr-July	1677	96	1748	1747
		Apr-June	1422	96	1578	1487
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (at)(17)	Apr-Sept	2348	102	2265	2297
		Apr-July	2215	102	2175	2180
		Apr-June	1936	102	2036	1901
	FLATHEAD RIVER					
3630	Columbia Falls (at)(17)	Apr-Sept	6149	98	6218	6299
		Apr-July	5693	97	5879	5846
		Apr-June	4888	98	5369	4993
3720	Polson (near)(18)	Apr-Sept	7397	99	7456	7463
		Apr-July	6840	99	7044	6939
		Apr-June	5828	99	6431	5896
	SWAN RIVER					
3700	Big Fork (near)	Apr-Sept	708	110		641
		Apr-July	626	110		568
		Apr-June	503	109		460
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	1059	106	775	1000
		Apr-July	965	106	705	907
		Apr-June	824	106	636	775
	FLINT CREEK					
3295	Maxville (at)	Apr-Sept	44.1	95	30.2	46.4
		Apr-July	33.3	94	21.4	35.4
	BOULDER CREEK					
3300	Maxville (at)	Apr-Sept	25.4	90	15.2	28.2
		Apr-July	23.4	91	14.0	25.8
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	Apr-Sept	76.5	95	57.6	80.2
		Apr-July	69.1	96	52.8	72.1

(17) Corrected for storage in Hungry Horse Reservoir.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1962

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	CLARK FORK RIVER					
3404	Milltown (above)(14)	Apr-Sept	771	95	478	815
		Apr-July	679	95	404	716
		Apr-June	575	95	356	609
3405	Missoula (above)	Apr-Sept	1830	101	1251	1814
		Apr-July	1644	101	1110	1620
		Apr-June	1399	101	992	1384
3530	Missoula (below)	Apr-Sept	3425	102		3361
		Apr-July	3131	102		3059
		Apr-June	2673	102		2608
3545	St. Regis (at)	Apr-Sept	4588	101	3454	4549
		Apr-July	4230	102	3148	4140
		Apr-June	3614	102	2873	3550
3890	Plains (near)(18)	Apr-Sept	12305	100		12337
		Apr-July	11255	100		11316
		Apr-June	9672	100		9625
3920	Whitehorse Rapids (at)(18)	Apr-Sept	13900	100		13932
		Apr-July	12708	100		12763
		Apr-June	10800	100		10816
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(15)	Apr-Sept	182	103		176
		Apr-July	169	103		164
	BITTERROOT RIVER					
3440	Darby (near)	Apr-Sept	591	101	402	587
		Apr-July	549	100	366	547
		Apr-June	484	101	339	477
3528	Missoula (near)(16)	Apr-Sept	1595	102		1557
		Apr-July	1487	102		1450
		Apr-June	1274	102		1244
	BLODGETT CREEK					
3475	Corvallis (near)	Apr-Sept	46.0	98		46.7
		Apr-July	43.9	99		44.4
	BURNT FORK CREEK					
3510	Stevensville (near)	Apr-Sept	29.7	95		31.2
		Apr-July	26.5	95		28.0

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner.
(15) Corrected for storage in West Fork Bitterroot River Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1962

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	MISSOURI RIVER BASIN					
	RED ROCK RIVER					
0110	Kennedy Ranch (at)	May-Sept	57.4	104	20.4	54.9
		May-July	51.2	104	17.0	49.1
0125	Monida (near)(1)	Apr-Sept	84.3	98	35.8	86.4
		Apr-July	79.5	97	28.6	82.2
	BIG HOLE RIVER					
0255	Melrose (near)	Apr-Sept	727	94	397	770
		Apr-July	680	95	367	714
	BOULDER RIVER					
0330	Boulder (near)	Apr-Sept	78.4	98	46.0	79.9
		Apr-July	75.2	98	43.9	76.5
	JEFFERSON RIVER					
0345	Sappington (at)	Apr-Sept	994	93	472	1074
		Apr-July	893	93	421	958
	MADISON RIVER					
0375	West Yellowstone (near)	Apr-Sept	231	108	168	216
		Apr-July	176	107	123	165
0385	Grayling (near)(2)	Apr-Sept	487	109	329	448
		Apr-July	395	110	241	357
0410	McAllister (near)(3)	Apr-Sept	807	105	512	756
		Apr-July	665	108	384	613
	GALLATIN RIVER					
0435	Gateway (near)	Apr-Sept	563	123	331	459
		Apr-July	490	124	267	395
	EAST GALLATIN RIVER					
0480	Bozeman (at)	Apr-Sept	55.7	120	20.9	46.4
		Apr-July	49.2	121	16.7	40.7
	HYALITE CREEK					
0500	Hyalite R. S. (at)(4)	Apr-Sept	42.7	118	24.2	36.1
		Apr-July	36.9	119	20.6	31.0
	GALLATIN RIVER					
0525	Logan (at)	Apr-Sept	618	126	230	492
		Apr-July	532	126	164	422

(1) Corrected for storage in Lima Reservoir.
(2) Corrected for storage in Hebgen Lake.
(3) Corrected for storage in Hebgen and Ennis Lakes.
(4) Corrected for storage in Middle Creek Reservoir.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1962

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	MISSOURI RIVER					
0545	Toston (at)(3)	Apr-Sept	2461	105	1102	2342
		Apr-July	2135	105	887	2030
0908	Fort Benton (at)(5)	Apr-Sept	3697	103		3599
		Apr-July	3164	103		3076
1095	Virgelle (at)(6)	Apr-Sept	4420	101		4393
		Apr-July	3833	101		3803
1150	Zortman (near)(6)	Apr-Sept	4850	101		4806
		Apr-July	4193	101		4143
1320	Fort Peck Dam (below)(7)	Apr-Sept	4784	100		4761
		Apr-July	4222	101		4181
1770	Wolf Point (near)(7)	Apr-Sept	5296	101		5261
		Apr-July	4629	100		4652
3300	Williston, N.D.(near)(8)	Apr-Sept	12976	103	4475	12562
		Apr-July	11307	102	3715	11101
	PRICKLY PEAR CREEK					
0615	Clancy (near)	Apr-Sept	19.1	80	9.7	23.9
		Apr-July	16.8	81	8.4	20.8
	NORTH FORK SUN RIVER					
0785	Augusta (near)	Apr-Sept	223	93		239
		Apr-July	202	91		222
	SUN RIVER					
0786	Gibson Dam (at)(10)	Apr-Sept	559	95	474	588
		Apr-July	512	95	440	538
	MARIAS RIVER					
0995	Shelby (at)	Apr-Sept	608	92		659
		Apr-July	557	92		605
	SOUTH FORK MUSSELSHELL R.					
1185	Martinsdale (above)	Apr-Sept	56.7	106		53.6
		Apr-July	54.6	106		51.4
	MUSSELSHELL RIVER					
1205	Harlowton (at)(9)	Apr-Sept	86.3	104		83.0
		Apr-July	85.2	104		82.0

(3) Corrected for storage in Hebgen and Ennis Lakes.
(5) Corrected for storage in Canyon Ferry Reservoir.
(6) Corrected for storage in Canyon Ferry and Tiber Reservoirs.
(7) Corrected for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
(8) Corrected for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill and Boysen Reservoirs.
(9) Corrected for storage in Durand and Martinsdale Reservoirs.
(10) Corrected for storage in Gibson Reservoir and diversions.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1962

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	YELLOWSTONE RIVER					
1915	Corwin Springs (at)	Apr-Sept	2247	114	1358	1980
		Apr-July	1866	113	1129	1649
1925	Livingston (at)	Apr-Sept	2540	113		2252
		Apr-July	2091	112		1863
2145	Billings (at)	Apr-Sept	4680	110		4261
		Apr-July	4018	110		3657
3090	Miles City (at)(12)	Apr-Sept	7054	105		6721
		Apr-July	6176	105		5883
3295	Sidney (at)(12)	Apr-Sept	7210	104		6921
		Apr-July	6378	104		6137
	SHIELDS RIVER					
1935	Clyde Park (at)	Apr-Sept	128	115		111
		Apr-July	118	115		103
	ROSEBUD CREEK					
2045	Absarokee (near)(11)	Apr-Sept	298	112		267
		Apr-July	242	112		216
	STILLWATER RIVER					
2050	Absarokee (near)(11)	Apr-Sept	698	112		620
		Apr-July	587	112		523
	CLARKS FORK RIVER					
2075	Chance (at)	Apr-Sept	637	103		617
		Apr-July	577	104		552
2085	Edgar (at)	Apr-Sept	668	102		652
		Apr-July	592	103		575
	ROCK CREEK					
2095	Red Lodge (near)	Apr-Sept	129	115	77.6	112
		Apr-July	100	116	58.0	86.3
	BULL LAKE CREEK					
2250	Lenore (near)(14)	Apr-Sept	203.0	119		170*
	NORTH POPO AGIE RIVER					
2320	Milford (near)	Apr-Sept	93.0	126	57.0	74
	LITTLE POPO AGIE RIVER					
2330	Lander (near)	Apr-Sept	57.0	133		43
	WIND RIVER					
2185	Dubois (at)	Apr-Sept	110.0	110		100
	SHOSHONE RIVER					
2820	Buffalo Bill Dam (bl)(13)	Apr-Sept	902.0	106		851

(11) Corrected for storage in Mystic Lake.
(12) Corrected for storage in Buffalo Bill and Boysen Reservoirs.
(13) Corrected for storage in Buffalo Bill Reservoir and Heart Mountain diversion.
(14) Corrected for storage in Bull Lake Reservoir.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
COLUMBIA RIVER BASIN							
Kooteani River							
14A4	Brush Creek	5000	2/19	34	10.2	10.6	13.4*
Can 10	Fernie	3500	2/27	22	6.3	7.8	9.1
Can 12A	Field	4200	2/27	21	5.8	8.6	5.5
Can 43	Gray Creek	5100	3/1	59	16.1	19.2E	16.7*
Can 33	Kicking Horse	5400	2/27	43	10.9	13.5	13.3*
Can 20B	Kimberley	3800	2/28	25	7.7	10.8	7.6
Can 32	Marble Canyon	5000	3/1	40	10.8	18.5	13.2*
Can 10A	New Fernie	4100	2/27	46	12.8	10.1	13.1
15A1	Red Mountain	6000	2/20	51	14.4	19.7	18.0
Can 8A	Sinclair Pass	4500	3/1	19	4.6	7.3	5.7*
Can 20A	Sullivan Mine	5100	2/27	39	11.3	14.8	13.1*
Can 41	Upper Elk River	4400	2/28	16	4.5	9.1	8.2*
14A7	Weasel Divide	5450	2/21	83	27.9	34.0	29.6*
Flathead River							
13B14A	Basin Creek	5000	2/28	35	11.3	7.9	9.2*
14B3	Bassoo Peak	5150	2/26	38	11.0	6.9	-
13B3	Big Creek	6750	3/1	100	38.4	36.1	36.6
13A17	Camp Misery	6400	2/23	98	34.5	-	-
13A2M	Desert Mountain	5600	2/26	45	13.4	12.2	14.1*
13B4	Fatty Creek	5500	3/1	59	19.0	-	-
14A9	Griffin Creek Divide	5150	3/5	46	12.9	9.0	-
14A3	Hell Roaring Divide	5770	2/22	77	23.0	28.6	26.9*
13B13A	Holbrook	4530	2/28	37	13.4	8.6	9.9*
14A6	Kishenehn	3886	2/25	30	8.5	8.0	10.5*
14A5	Logan Creek	4300	2/19	33	9.4	6.2	9.0*
13A5M	Marias Pass	5250	2/24	47	13.4	8.2	17.4
13A16	Mineral Creek	4000	3/3	63	15.1	16.9	20.4*
13B7	North Fork Jocko	6330	3/2	112	43.0	40.3	38.3
13A13	Quintonkon	3800	3/1	46	14.6	-	13.9*
13B2	Spotted Bear Mt.	7000	2/28	44	13.6	11.2	14.8*
13A10	Strawberry Lake	6500	3/6	92	31.8	26.9	33.7*
13B1	Trinkus Lake	6500	3/6	93	33.9	34.0	36.3*
13A12M	Trout Lake	3600	2/27	42	13.3	8.2	15.4*
13B11	Twin Creeks	3580	2/27	35	10.8	8.7	11.2*
13B5	Upper Holland Lake	7000	3/6	89	34.5	24.6	28.4*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1956

No.	Name	Elevation	Date of Survey	Snow Depth	Water Content	Last Year	Average

COLUMBIA RIVER BASIN

Snohomish River

[illegible]	Beaver Creek	3600	2/19	34	10.2	10.6	23.4*
Gem 10	Pernie	3900	2/27	32	7.8	9.1	
Gem 12A	Plain	4300	2/27	31	8.6	5.3	
Gem 43	Deep Creek	3100	3/1	59	16.1	19.2B	16.7*
Gem 33	Kicking Horse	5100	2/27	43	10.9	13.5	13.3*
Gem 20B	Stanley	3400	2/28	45	7.7	10.8	7.6
Gem 32	Martin Canyon	5000	3/1	40	10.8	14.5	13.3*
Gem 12A	Bay Pernie	4100	2/27	46	12.8	10.1	13.1
[illegible]	Red Mountain	6000	2/20	51	14.4	19.7	18.0
Gem 8A	Bloedale Pass	4300	3/1	39	4.6	7.3	5.7*
Gem 20A	Spillman Mine	5100	2/27	39	11.3	14.8	13.1*
Gem 41	Upper Big River	4400	2/28	16	4.5	9.1	8.2*
[illegible]	Wenzel Divide	5450	2/21	83	27.9	34.0	29.6*

Okanogan River

[illegible]	Beaver Creek	3500	2/28	35	11.3	7.9	5.2*
[illegible]	Beaver Peak	5150	2/26	38	12.0	6.9	-
[illegible]	Big Creek	6750	3/1	100	36.4	36.1	36.4
[illegible]	Camp Misery	6400	2/23	98	34.5	-	-
[illegible]	Beaver Meadows	3600	2/20	45	13.4	12.2	14.3*
[illegible]	Patty Creek	5700	3/1	59	19.0	-	-
[illegible]	Griffin Creek Divide	5150	3/5	44	12.9	9.0	-
[illegible]	Jack Rowley Divide	5770	2/28	77	23.0	28.6	28.9*
[illegible]	Bolgese	4450	2/28	37	13.4	8.6	9.9*
[illegible]	Tiadenton	3865	2/25	30	8.9	8.0	10.2*
[illegible]	Logan Creek	4300	2/29	33	9.4	6.2	9.2*
[illegible]	Marias Pass	5250	2/24	47	13.4	6.2	17.4
[illegible]	Mineral Creek	4700	3/3	63	15.1	16.9	20.4*
[illegible]	North Fork Lyman	6450	3/3	112	43.0	40.3	38.3
[illegible]	Quintolean	3800	3/1	46	14.6	-	13.9*
[illegible]	Spotted Deer Mt.	7500	2/28	44	13.6	11.2	14.2*
[illegible]	Stranberry Lake	6400	3/3	82	31.8	26.9	23.9*
[illegible]	Trinkus Lake	5600	3/3	93	33.8	34.0	36.3*
[illegible]	Trout Lake	3800	2/27	42	13.3	8.2	10.4*
[illegible]	Twin Cranes	3580	2/27	35	10.8	8.7	11.2*
[illegible]	Upper Holland Lake	7000	3/6	89	34.5	24.6	28.4*

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
Clark Fork River							
13C13	Black Pine	7100	2/25	38	10.7	7.8	-
13B10	Coyote Hill	4200	2/28	38	11.8	8.4	9.9*
13C9	El Dorado Mine	7800	2/23	61	17.9	11.8	17.3*
15C2	Fish Lake Airstrip	5000	2/26	94	38.9	36.0	39.5*
13C11	Fred Burr Pass	8000	3/1	60	19.6	17.1	22.4*
13C10	Gold Creek Lake	7200	2/23	47	13.0	9.0	13.4*
13C4	Intergaard	6450	3/1	32	8.0	4.8	6.6
15B2	Lookout	5250	2/26	88	31.4	29.8	33.7*
13C8	Lubrecht Forest #6	4040	2/28	24	7.8	2.8	3.4*
13C12	Red Lion	7000	3/1	45	12.5	10.6	14.4*
13C3	Skalkaho Summit	7259	2/28	63	21.8	19.6	-
13C2	Slide Rock Mountain	7100	2/26	44	12.8	8.8	12.5*
13C5	Southern Cross	6500	3/1	25	6.8	3.8	5.0
13C7	Storm Lake	7780	3/1	42	12.0	9.4	11.6*
13C6	Stuart Mill	6500	3/1	25	6.0	3.5	5.6
13C1	Stuart Mt.	7400	2/24	74	25.9	20.0	27.4*
14B1	TV Mountain	6800	2/25	56	17.2	10.5	14.9*
Bitterroot River							
13C16	Ambrose	6475	2/26	43	12.8	9.2	-
13D1	East Fork R. S.	5400	3/2	27	6.2	4.6	6.5*
13D2	Gibbons Pass	7100	2/27	60	19.5	15.4	22.2
14C5	Lolo Pass	5230	2/26	90	34.4	28.4	32.9*
14C7	Lost Horse	5940	2/28	78	27.0	25.0	-
13D16	Moose Creek	6200	2/26	45	12.6	10.6	16.1
14D2	Nez Perce Camp	5580	3/1	46	13.8	9.2	12.4*
14D1	Nez Perce Pass	6575	3/1	47	14.4	9.3	16.8*
14C6	Powell R. S.	4230	2/26	38	13.7	9.6	14.6*
14C4	Savage Pass	6600	2/27	70	24.2	21.0	-
14C8	Twin Lakes	6510	2/28	99	36.2	31.8	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

ITEM NO.	SNOW COURSE NAME	ELEVATION	COURSE DATA: DATE OF SURVEY	COURSE DATA: NUMBER OF SAMPLES	COURSE DATA: AVERAGE DEPTH	COURSE DATA: WATER CONTENT	LAST YEAR'S COMPARABLE: WATER CONTENT	% OF LAST YEAR'S
	Black Fork River							
10012	Black Pine	7100	3/25	38	10.7	7.8	-	
1010	Coyote Hill	6400	3/28	34	11.8	8.4	8.9*	
1009	El Dorado Pine	7800	3/23	61	17.7	11.8	17.3*	
1013	Pine Lake Airstrip	7800	3/24	34	36.7	26.0	34.8*	
1011	Pond Dam Face	8000	3/1	60	19.6	17.1	25.4*	
1010	Quid Creek Lake	7700	3/23	47	11.0	7.0	13.4*	
1004	Tetonpond	6400	3/1	32	8.0	4.8	6.6	
1001	Loudon	6700	3/26	88	21.4	29.2	30.7*	
1008	Sawmill Forest #4	6500	3/28	31	7.8	5.8	7.5*	
10012	Red Lion	7000	3/1	45	12.9	10.6	14.4*	
1013	Shallots Ranch	7700	3/26	60	21.8	29.6	-	
1002	Stille Rock Mountain	7100	3/28	44	12.8	8.8	12.2*	
1003	Bentleys Grove	6500	3/1	20	5.8	3.4	4.6	
1007	Storm Lake	7700	3/1	42	13.0	8.2	11.2*	
1006	Stuart Mill	6700	3/1	28	6.0	3.8	5.8	
1014	Stuart Mt.	7100	3/24	74	23.9	30.0	37.4*	
1005	W Mountain	6400	3/25	50	17.2	10.4	14.4*	
	Williamson River							
10014	Lakeview	6175	3/26	42	10.8	9.2	-	
1015	Bear Trap R. S.	5100	3/1	27	6.1	4.6	6.4*	
1016	Gibbons Pass	7100	3/27	60	19.3	25.4	42.2	
1015	Lolo Pass	6510	3/26	90	34.4	28.1	35.3*	
1017	Lost Pierre	7510	3/23	78	27.0	28.0	-	
10016	Moore Creek	6800	3/25	42	11.6	10.6	18.1	
1020	Rex Pierre Camp	6500	3/1	46	13.8	9.2	12.6	
1021	Rex Pierre Pass	6975	3/1	47	14.4	9.2	12.4*	
1018	Powell R. S.	6830	3/28	32	13.7	8.8	12.6*	
1019	Spruce Pine	7600	3/27	70	24.4	21.0	-	
1022	Twin Lakes	6510	3/25	99	34.2	32.8	-	

Data not already given in previous ISA publications. "Reserved Rights"

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
MISSOURI RIVER BASIN							
Beaverhead River							
13D10	Bloody Dick	7600	2/28	37	9.8	6.2	10.0*
13D9	Gold Stone	8100	2/28	45	13.4	9.6	12.9*
12E3	Camp Creek	6800	2/26	35	9.2	4.5	9.2
11E12	Kilgore	6200	2/28	39	12.1	7.9	9.5
11E4	Lakeview Canyon	6930	2/26	46	12.6	6.1	10.5*
11E3	Lakeview Ridge	7400	2/26	43	10.7	5.0	8.9*
13E1	Lemhi Pass	7480	2/26	32	7.0	4.7	7.5*
12E2	Limekiln	6950	2/21	0	0	0	1.2*
13D11	Selway Junction	6800	Discontinued			3.1	6.8*
13D12	Terrell Creek	6650	Discontinued			3.3	4.2*
13E2	Trail Creek	7090	2/26	31	6.1	3.7	6.7*
12E1	White Pine Ridge	8850	2/21	23	4.8	3.3	4.6*
Big Hole River							
13D14	Anderson Meadow	7000	3/2	29	6.2	3.7	7.0*
13D4	Below Big Hole Pass	6900	3/1	42	11.4	6.0	12.2*
13D3	Big Hole Pass	7240	3/1	47	14.2	9.7	14.3*
13D5	East Boundary	6700	3/1	29	6.8	3.2	6.6*
13D15	Elk Horn	8450	3/1	35	10.1	5.4	9.1
13D8	Jahnke Creek	7340	2/28	36	7.0	5.1	9.4*
13D6	Miner Forks	7300	2/28	43	11.2	8.2	10.8*
13D7	Miner Lake	6720	2/28	36	7.3	5.0	7.1*
13D13	Wise River	6300	3/2	22	5.0	2.3	4.9*
Jefferson River							
12C7	Berry Meadow	7300	2/23	34	8.0	-	-
12C6	Picnic Grounds	6500	3/1	23	5.0	2.2	4.7*
12D1	Pipestone Pass	7200	2/23	25	5.3	3.0	4.4

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
Madison River							
11E9	Big Springs	6500	2/27	68	22.8	16.5	20.4
11E5	Hebgen Dam	6550	2/26	44	12.1	8.1	11.2
11E10	Island Park	6315	2/27	57	17.6	12.5	15.8
11D5	Jack Creek	7600	3/3	37	7.0	1.1	-
10E2	Norris Basin	7500	2/28	39	9.9	7.5	9.3*
11D3	North Meadow	7500	3/3	37	9.6	4.8	-
11E8	Valley View	6500	2/26	54	15.8	7.5	13.4*
11E7	West Yellowstone	6700	2/26	50	15.0	7.5	11.3
Gallatin River							
10D4	Devil's Slide	8100	2/24	71	21.8	14.4	16.3
10D3	Hood Meadow	6600	2/24	36	9.4	6.2	7.2
10D1	New World	6700	2/24	36	9.0	6.6	8.3*
11E6	Twenty-One Mile	7150	2/26	62	19.0	12.3	16.0
Missouri River (Main Stem)							
12C5	Chessman Reservoir	6200	2/28	15	3.3	0.2	4.3
9C1	Crystal Lake	6100	3/1	44	12.1	7.0	9.9
10C2	Grasshopper	7000	2/28	25	5.5	0.8	4.3
10C1	Kings Hill	7950	2/26	41	10.1	6.2	11.5
9A1	Rocky Boy	5200	3/1	16	4.4	1.2	4.8
12C1	Stemple Pass	6900	3/1	36	9.1	4.7	9.2
12C2	Tenmile, Lower	6250	2/27	28	6.6	3.2	6.3
12C3	Tenmile, Middle	6800	2/26	38	9.0	4.9	9.2
12C4	Tenmile, Upper	8000	2/26	43	11.5	6.5	11.9
Sun-Teton-Marias Rivers							
12B8	Bench Mark	5500	2/19	23	7.5	5.1	8.1*
12B6	Cabin Creek	5400	2/28	28	8.3	-	6.8*
12B9	Five-Bull	5600	2/19	20	5.6	2.3	6.2*
12A1	Freight Creek	6000	2/20	39	12.7	10.8	14.9*
12B5	Gates Park	5300	2/28	34	10.4	7.0	9.9*
12B7	Goat Mountain	7000	2/28	37	11.8	7.5	10.7
12B2	Waldron Creek	5600	2/20	16	4.6	2.8	6.5*
12B1	West Fork	6000	2/20	NR	NR	8.5	14.0*
12B4	Wrong Creek	5700	2/28	44	14.8	13.3E	14.8*
12B3	Wrong Ridge	6800	2/28	50	17.5	18.0	20.4*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE NO.	SNOW COURSE NAME	ELEVATION	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SNOW DEPTH	CURRENT DATA: WATER CONTENT	PAST RECORD: WATER CONTENT: LAST YEAR	PAST RECORD: WATER CONTENT: AVERAGE
Milk River - (Cypress Hills)							
10AA2	Cress Day B	3450	2/28	2	0.4	0.5	1.8*
9AA1	Cypress Park C	4000	3/1	8	2.2	4.4	5.2*
10AA1	Elkwater Lake A	4100	2/28	5	0.8	0.8	2.7*
7AA1	Val Marie D	2700	2/27	5	1.4	1.5	1.5*
Upper Yellowstone River							
10C5	Bald Ridge	7500	2/27	41	9.9	7.6	-
9D1	Camp Senia	7890	3/2	31	7.9	2.3	5.5*
10E3	Canyon	7750	2/28	57	16.3	10.1	13.8*
10D7	Cooke City	7400	2/27	35	8.1	5.5	7.8
10D5	Crevice Mountain	8400	2/28	40	8.9	4.8	8.2
9D3	Gertrude Lake	9250	3/2	56	14.8	-	-
9D5	Grizzly Peak	8400	3/1	69	22.2	-	-
10D6	Independence	8000	2/26	59	18.4	-	13.7*
10E4	Lake Camp	7850	2/28	47	11.2	6.8	10.1*
9E1	Lodgepole	8200	2/27	42	9.7	5.8	10.6*
10E1	Lupine Creek	7300	2/28	44	12.4	7.5	9.4*
10D12	Monument Peak	9000	2/26	77	25.6	-	-
10C3	Porcupine	6500	2/27	32	8.0	4.2	5.9
10D10	Sacajawea	6550	2/21	44	11.2	7.6	-
10E7	Thumb Divide	7900	2/28	76	24.5	13.5	21.4*
9D4	Timberline Creek	8850	3/2	62	18.0	-	-
9D2	West Rosebud	7500	3/2	36	10.4	0	-
Wind River							
9F12	Big Warm	8800	2/25	42	11.0	4.7	9.9*
9F4	Burroughs Creek	8800	2/27	49	13.7	7.0	14.2*
9F10	Dinwoodie	10000	2/28	49	13.0	6.1	10.1*
9F17A	Dinwoodie Glaciers	10500				6.0E	-
9F9	Dry Creek	9500	2/28	31	7.1	3.1	5.2*
9F6	Du Noir	8750	2/25	41	10.5	3.0	7.8
9F7	Geyser Creek	8500	2/26	34	8.6	3.2	7.5*
9F8	Little Warm	9500	2/26	67	20.5	9.5	14.3*
9F14	Sheridan R. S. #2	7500	2/25	33	8.5	2.2	7.7*
9F3	T-Cross Ranch	8000	2/27	27	6.9	3.3	6.8
10F9M	Togwotee Pass	9600	3/1	81	28.3	19.0	26.0*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE
Popo Agie River							
8G2	Blue Ridge	9500	2/20	47	11.4	4.2	11.0*
8G5	Bruce's Camp	6500	2/21	8	2.3	2.8	3.5*
9G3	Hobbs Park	10000	3/2	59	17.5	10.6	16.6*
9G4	Mosquito Park	9500	3/2	36	9.1	4.3	7.3*
8G1	Sawmill Glade	8500	2/20	33	8.6	4.3	6.9
8G3M	South Pass	9000	2/20	53	14.1	5.7	13.2
9F11	St. Lawrence R. S.	9000	3/1	34	8.9	3.3	6.0*
9G2	Trout Creek	8400	3/2	23	5.1	4.4	6.7*
9G7A	Twenty Lakes	10500				-	-
Big Horn River							
7E31	Five-Springs Falls	7500	2/27	23	5.2	3.8	5.4*
9F19A	Kirwin	11000		NR		5.5E	-
7E30	Medicine Wheel	9000	2/25	54	14.1	11.6	13.2*
8F1	Owl Creek	8700		NR		5.7	5.5*
9F15	Wood River #2	8000		NR		4.4	3.9*
Shoshone River							
9E4M	Carter Mountain	7800	2/25	23	5.0	3.2	3.5*
10E6	East Entrance	7000	2/27	35	8.9	7.5	10.8*
10E5	Sylvan Pass	7100	2/27	44	10.5	9.5	13.4*
9F18A	Younts Peak	8500				-	-
Nowood Creek							
7E25	Cold Springs Camp	8700	2/26	35	8.0	4.8	5.9*
7E24M	Medicine Lodge Lakes	9500	2/26	49	13.2	7.6	9.0*
7E27M	Onion Gulch	8100	3/1	46	12.3	5.2	7.3*
7E26	West Tensleep Lake	9075	2/27	57	15.5E	8.0E	9.4*
7E35	Tyrell R. S.	8300	3/1	38	9.8	5.1	5.5*
Shell Creek							
7E21M	Bald Mountain	9600	2/24	77	22.9	14.8	15.9*
7E17	Granite Pass	8950	2/27	61	17.7	12.0	12.9*
7E4	Ranger Creek	8800	2/23	44	10.3	4.8	7.0*
7E23	Shell Creek	9600	2/27	66	18.5E	10.0	10.9*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1962

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
Tongue River							
7E20	Beaver-Tongue	9200	2/24	72	19.7	13.0	14.9*
7E32M	Big Goose #2	7700	2/28	35	9.2	6.3	6.1*
7E18A	Bone Springs Divide	9200	2/27	65	18.5E	12.0E	13.0*
7E33	Burgess R. S. #2	7900	2/27	28	7.1	5.3	6.1*
7E34A	Dome Lake #2	8800	2/27	44	10.5E	8.0E	6.9*
7E14A	Gloom Creek	9300	2/27	56	14.5E	13.0E	11.0*
7E11	Sibley Lake	8000	2/27	42	11.5	8.2	8.3*
7E10	Steam Boat Point	7500	2/27	30	8.2	5.7	6.0*
7E12	Sucker Creek	9000	2/27	47	13.0E	11.0E	10.1*
7E13	Wood Rock G. S.	8500	2/27	43	11.5	7.4	8.3*
Powder River							
7F1	Bear Trap	8000	3/2	39	10.8	6.7	-
7F2	Canyon Creek	7400	3/2	42	11.3	9.3	-
7E36A	Clouds Peak	10000	2/27	51	13.5E	10.0E	-
6E2	Muddy Creek G. S.	7800	3/2	19	5.1	3.9	3.9*
7E8	Munkres Pass	9700	3/2	47	13.0	5.5	6.7*
7E5	Soldier Park	8700	3/1	28	7.1	3.8	4.5*
7E6	Sour Dough	8500	3/1	35	9.3	6.4	5.8*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

RESERVOIR STORAGE
as of
February 28, 1962

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE - 1000 A. F. 1962	1961	1943-57 Average
MISSOURI RIVER BASIN - WYOMING					
Wind	Bull Lake	152.0	85.6	57.9	63.2
	Pilot Butte	31.6	12.7	13.5	13.3
	Boysen	560.0AC	203.3	98.1	215.1**
Owl Creek	Anchor	16.5	0.0	-	-
Shoshone	Buffalo Bill	440.0	156.1	129.6	235.4
Belle Fourche	Key Hole	190.0AC	12.1	3.8	7.0**
MISSOURI RIVER BASIN - NORTH DAKOTA					
Missouri	Garrison	18,100.0AC	3,509.6	4,988.0	-
Heart	E.A.Patterson	5.6AC	1.9	3.5	3.8**
	Lake Tschida	68.7AC	34.3	48.3	51.3**
James	Jamestown	20.0AC	11.4	15.6	-
MISSOURI RIVER BASIN - SOUTH DAKOTA					
Missouri	Oahe	17,000.0AC	3,951.0T	1,836.0T	-
	Fort Randall	3,800.0AC	2,441.8	2,519.2	1,741.4**
	Gavins Point	320.0AC	203.4	233.4	-
Grand	Shadehill	84.0AC	26.9	50.2	75.2**
Cheyenne	Angostura	90.0AC	10.9	4.7	40.9**
	Deerfield	15.1AC	3.8	2.5	11.6**
	Pactola	55.0AC	3.5	15.9	-
Belle Fourche	Belle Fourche	185.2AC	34.6	29.3	106.8

** Average for period of record.
AC Active Capacity USBR, Billings.
T Total storage.

RESERVOIR STORAGE
as of
February 28, 1962

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE - 1000 A. F. 1962	1961	1943-57 Average
COLUMBIA RIVER BASIN - MONTANA					
Flathead	Hungry Horse	3,428.0	2,172.0	3,175.0	2,369.0**
	Flathead Lake	1,791.0	806.5	1,078.0	768.2
	Camas 1/	45.2	27.4	25.5	25.1
	Mission Valley 2/	100.3	24.4	30.0	35.5
Clark Fork	Georgetown Lake	31.0	22.6	23.3	23.0
Bitterroot	Como Lake	34.8	13.8	-	10.7
MISSOURI RIVER BASIN - MONTANA					
Beaverhead	Lima	84.0	16.5	9.4	32.8
Ruby	Ruby	38.8	23.2	21.2	27.2**
Madison	Hebgen Lake	345.0	109.6	133.7	213.9
	Ennis Lake	41.0	38.8	39.0	35.9
Gallatin	Middle Creek	8.0	2.5	-	3.8**
Missouri	Canyon Ferry	2,043.0	1,285.0	1,487.0	1,558.0**
	Hauser & Helena	61.9	44.1	59.6	53.8
	Lake Helena	10.4	4.6	9.6	8.1**
	Holter Lake	81.9	51.8	9.9	59.2
	Ackley Lake	5.8	NR	4.1	4.2
	Durand	7.0	1.4	4.0	4.9
	Martinsdale	23.1	1.5	4.0	9.8
	Fort Peck	19,410.0	8,185.0	11,370.0	11,178.0
Sun-Teton	Gibson	105.0	39.0	37.4	63.3
	Willow Creek	32.3	10.6	15.1	19.2
	Pishkun	32.0	17.0	16.8	18.8
Marias	Lower Two Medicine	16.6	0	0	0
	Four Horns	19.2	14.0	14.7E	8.6
	Tiber	1,316.0	620.5	632.3	632.7**
	Swift	30.0	16.8	14.3	23.1
	Lake Francis	112.0	76.0	77.7	94.6
Milk	Fresno	127.2	17.3	26.3	64.1
	Nelson	66.8	15.2	40.6	34.4
	Lake Sherburne	66.1	NR	-	20.1
Yellowstone	Mystic Lake	20.8	7.4	8.0	8.6
	Tongue River	68.0	52.4	15.5	9.0
	Cooney	27.5	15.1	-	9.1

1/ Sum of four small reservoirs on west side of Flathead Lake.
2/ Sum of eight small reservoirs in Mission Valley not including Jocko Lake.
** Average for period of record.

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region I, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska
Riverdale, N. D.

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Fish & Wildlife Service
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

Montana Power Company
Butte, Montana

Agricultural Experiment Station
North Montana Branch Station
Havre, Montana

Montana State Highway Dept.
East Glacier, Montana

National Park Service
Yellowstone National Park
Glacier National Park

Montana Experiment Station
Montana State College
Bozeman, Montana

Bonneville Power Administration
Portland, Oregon

Montana State School of Forestry
Montana State University
Missoula, Montana

Soil Conservation Service
Montana, Wyoming, Idaho

Soil Conservation Districts
Montana Counties

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch
Dept. of Lands & Forests
Victoria, British Columbia

Department of Northern Affairs
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COOPERATIVE SNOW SURVEYS

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"The Conservation of Water begins with the Snow Survey"